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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/736,078	12/13/2000	Jae Yong Lee	9983.109US01	6542
23552	7590	03/11/2004	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			LAM, DANIEL K	
			ART UNIT	PAPER NUMBER
			2667	5

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/736,078

Applicant(s)

LEE ET AL.

Examiner

Daniel K Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, and 4 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 4.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because
 - In figure 3, “Reverss” is misspelled.
 - Figures 1 and 2 should be designated by a legend such as --Prior Art—since they are referred as conventional arts in the specification. See MPEP § 608.02(g).

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:
 - Through out the specification, such as, on page 1, line 9, “multi point to point” is used. It should be “multipoint-to-point” instead in order to be consistent with the terminology commonly used in the MPLS art.
 - Similarly, on page 3, lines 6-7, “point to point” should be “point-to-point” instead.

Claim Objections

3. Claims 1 and 2 objected to because of the following informalities:
 - In claim 1, line 5, and claim 2, line 5, “multi point to point “ should be “multipoint-to-point” instead.

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- In claim 2, line 7, “loop-backing” should be “looping back”

Appropriate corrections are required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent Application Pub. No. US 2002/0181485 by Cao et al. in view of the admitted prior art, titled, “A Path Protection/Restoration Mechanism for MPLS Networks”, by Huang et al.

Regarding claim 1, Cao et al. discloses the claim limitations of a method for rerouting in a MPLS network comprising the steps of setting up the primary Explicitly Routed Label Switched Paths, S-A-B-E, and, backup secondary path, S-C-D-E. Upon the primary link failure, the traffic is rerouted using the backup secondary path (using backup Label switched Path, LSP, comprising an Explicitly Routed LSP); see fig.1 and page 3, col. 2, lines 7-17.

However, Cao et al. does not explicitly disclose the claim limitation that the backup path forming a reverse tree of a protected multipoint-to-point LSP between an ingress and an egress LSR.

The admitted prior art discloses the limitations that multiple working LSPs converge to form a multipoint-to-point tree with the Path Switching LSR as the leaves and the Path Merging LSR as the root. As a result, the recovery notification is traveling along a reverse point-to-multipoint path; see section 2.1, first paragraph, lines 5-11.

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to setup the backup LSP paths having a reverse tree of a protected multipoint-to-point LSP. Since the primary path is protected by the backup paths, the MPLS network can support advanced survivability requirements and enhance the reliability of IP networks as taught by the admitted prior art. (see section 1.0, second paragraph, lines 3-7).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent Application Pub. No. US 2002/0181485 by Cao et al. in view of the admitted prior art, titled, "A Path Protection/Restoration Mechanism for MPLS Networks", by Huang et al. in further view of U. S. Pat. No. U.S. 5,442,623 issued to Wu.

Regarding claim 2, Cao et al. discloses the claim limitations of a method for rerouting in a MPLS network comprising the steps of setting up the primary Explicitly Routed Label Switched Paths, S-A-B-E, and, backup secondary path, S-C-D-E. Upon the primary link

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failure, the traffic is rerouted using the backup secondary path (setting a backup Label switched Path, LSP, comprising an Explicitly Routed LSP); see fig.1 and page 3, col. 2, lines 7-17.

The admitted prior art discloses the claim limitations that multiple working LSPs converge to form a multipoint-to-point tree with the Path Switching LSR as the leaves and the Path Merging LSR as the root at the egress. As a result, the recovery notification is traveling along a reverse point-to-multipoint anycast paths (reverse anycast tree of a multi point to point LSP performing as a root); see section 2.1, first paragraph, lines 5-11. However, neither Cao et al. nor the admitted prior art disclose the limitation that, transferring, at a LSR sensed a failure, a traffic stream by looping back the traffic stream in a reverse direction.

Wu discloses the limitations that, after the two nodes 205 and 206 sensed the cable cut, the traffic stream arriving at node 205 via fiber 201-4 is looped back onto the protected ring 203-4 in the reverse direction. See fig. 3, and col. 3, lines 41-49, and lines 61-62.

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention to loop back the user traffic automatically in the reverse direction in order to avoid the failure and to maintain network operation as taught by Wu (see col. 3, lines 11-13).

Regarding claim 4, in addition to disclose the limitations regarding claim 2 discussed in the previous paragraph, Wu further discloses the limitations that:

- After the four-fiber cable has been cut, two Sonet line overhead bytes, K1 and K2, are used to relay the protection messages in each node in order to avoid the failure (generating, at the LSR sensed the multi failure, a fault indication signal, FIS, message representing that a transfer route does not exist and transferring the message to a LSR of a downstream when the multi failures are occurred in a plurality of links); see col. 4, lines 12-19.
- When a cable cut occurs in the ring between two nodes 205 and 206, the traffic arriving at node 205 via fiber 201-4 is looped back onto the protected ring 203-4 in the reverse direction (transferring, at the LSR of the downstream, the loop-backed traffic to the reverse anycast tree not suffering the multi failures based on the FIS message); see fig. 3, and col. 3, lines 41-49, and lines 61-62.

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Allowable Subject Matter

7. Claim 3 is objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel K. Lam whose telephone number is (703) 305-8605. The examiner can normally be reached on Monday-Friday from 8:30 AM to 4:30 PM.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

DKL: *dkl* March 1, 2004

Chau T. Nguyen
CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
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